

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): An image recording method comprising:
applying a pretreatment liquid on a surface of a recording material; and
discharging a recording ink according to image signals to form an ink image on the pretreatment liquid on the surface of the recording material before the pretreatment liquid applied on the recording material has dried, wherein the recording ink comprises a solvent and a component dispersed or dissolved in the solvent,

wherein the pretreatment liquid comprises a compound depressing at least one of the dispersibility and solubility of the component in the recording ink in an amount of 10 to 80 % by weight based on total weight, and

wherein the pretreatment liquid has a viscosity of from ~~10~~ 100 to 10, 000 mPa • s at 25 °C.

Claim 2 (Original): The image recording method according to Claim 1, wherein the component in the recording ink is a colorant.

Claim 3 (Original): The image recording method according to Claim 1, wherein the pretreatment liquid has a viscosity of from 20 to 10, 000 mPa • s at 25 °C .

Claim 4 (Original): The image recording method according to Claim 1, wherein the pretreatment liquid is applied on the surface of the recording material in an amount of from 0.5 g/m² to 10 g/m².

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Claim 5 (Original): The image recording method according to Claim 1, wherein the recording ink has a contact angle not greater than 90° against the surface of the recording material on which the pretreatment liquid is applied.

Claim 6 (Original): The image recording method according to Claim 1, wherein the pretreatment liquid has a surface tension of from 40 mN/m to 60 mN/m and the recording ink has a surface tension of from 20 mN/m to 40 mN/m.

Claim 7 (Original): The image recording method according to Claim 1, wherein the pretreatment liquid is applied on areas of the recording material on which the ink image is and is not formed.

Claim 8 (Original): The image recording method according to Claim 1, wherein the pretreatment liquid application is performed with a contact applicator.

Claim 9 (Original): The image recording method according to Claim 8, wherein the contact applicator comprises a roller.

Claim 10 (Original): The image recording method according to Claim 1, further comprising:

heating the ink image formed on the pretreatment liquid on the recording material before the pretreatment liquid dries.

Claim 11 (Original): The image recording method according to Claim 1, wherein the recording material comprises pulp fibers, and wherein the recording material has a sizing

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degree not less than 10 s and an air permeability of from 5 s to 50 s.

Claim 12 (Original): The image recording method according to Claim 1, wherein the component in the recording ink is an anionic material.

Claim 13 (Original): The image recording method according to Claim 12, wherein the anionic material is selected from the group consisting of anionic dyes, pigments dispersed by an anionic dispersant, dyes dispersed by an anionic dispersant, pigments modified by an anionic group, and anionic color particles.

Claim 14 (Withdrawn): A pretreatment liquid, comprising a compound in an amount of 10 to 80 % by weight based on total weight that depresses at least one of the dispersibility and solubility of a component in a recording ink, wherein the pretreatment liquid has a viscosity of from 10 to 10,000 mPa • s at 25 °C.

Claim 15 (Withdrawn): The pretreatment liquid according to Claim 14, wherein the component in the recording ink is a colorant.

Claim 16 (Withdrawn): The pretreatment liquid according to Claim 14, wherein the viscosity of the pretreatment liquid is from 20 to 10,000 mPa • s at 25 °C.

Claim 17 (Withdrawn): The pretreatment liquid according to Claim 14, further comprising water in an amount of from 5 % to 80 % by weight based on total weight of the pretreatment liquid.

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Claim 18 (Withdrawn): The pretreatment liquid according to Claim 14, further comprising water and a water-soluble liquid compound, wherein water and the water-soluble liquid compound are included in an amount of from 20 % to 80 % by weight based on total weight of the pretreatment liquid.

Claim 19 (Withdrawn): The pretreatment liquid according to Claim 18, wherein water is included in the pretreatment liquid in an amount not greater than 40 % by weight based on total weight of the pretreatment liquid.

Claim 20 (Withdrawn): The pretreatment liquid according to Claim 19, wherein the content of water is not greater than an equilibrium water content of the water-soluble liquid compound at 60 %RH.

Claim 21 (Withdrawn): The pretreatment liquid according to Claim 14, further comprising a water-soluble organic solvent in an amount of from 5 to 70 % by weight based on total weight of the pretreatment liquid.

Claim 22 (Withdrawn): The pretreatment liquid according to Claim 14, wherein the compound depressing at least one of the dispersibility and solubility of the component in the recording ink is an ionic compound.

Claim 23 (Withdrawn): The pretreatment liquid according to Claim 22, wherein the ionic compound is an ionic compound having an alkyl group having not less than 6 carbon atoms.

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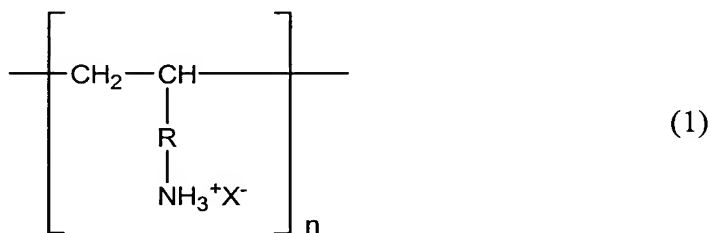
Claim 24 (Withdrawn): The pretreatment liquid according to Claim 22, wherein the ionic compound is an ionic polymer.

Claim 25 (Withdrawn): The pretreatment liquid according to Claim 22, wherein the ionic compound is a cationic compound.

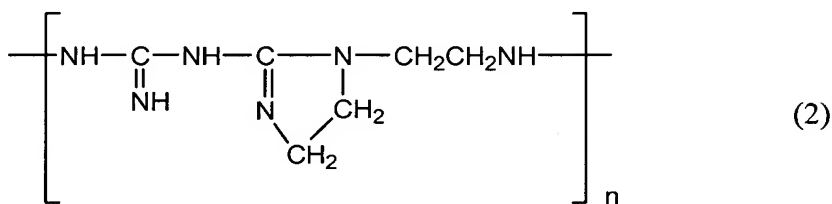
Claim 26 (Withdrawn): The pretreatment liquid according to Claim 25, wherein the cationic compound is a cationic polymer.

Claim 27 (Withdrawn): The pretreatment liquid according to Claim 26, wherein the cationic polymer has a cationic degree not less than 3.0 meq/g.

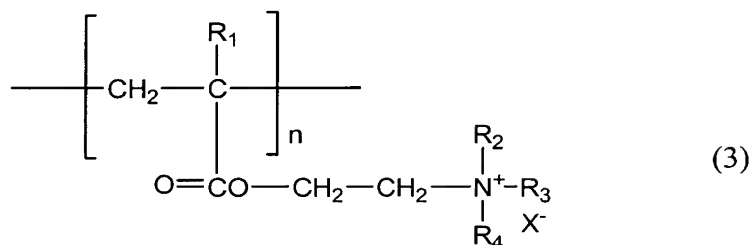
Claim 28 (Withdrawn): The pretreatment liquid according to Claim 26, wherein the cationic polymer has or includes a formula selected from the group consisting of the following formulae (1) to (18):



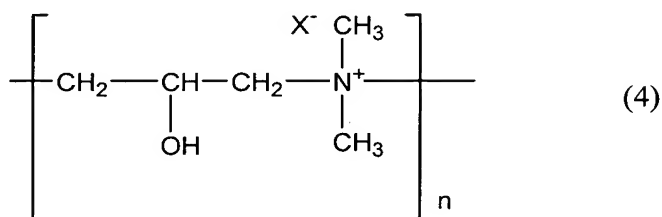
wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; R represents an alkylene group having from 1 to 3 carbon atoms; and n is an integer;



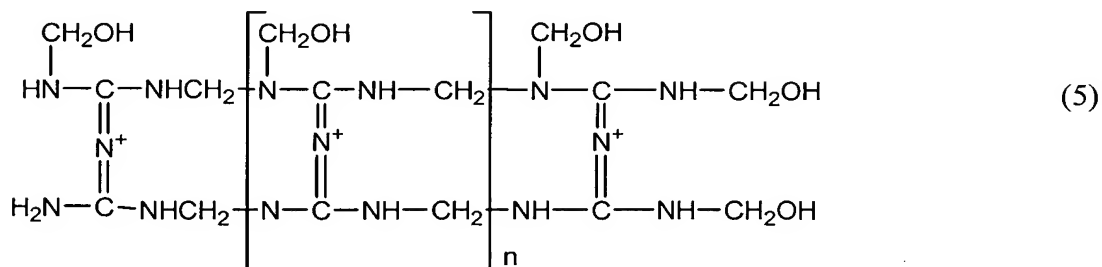
wherein n is an integer;



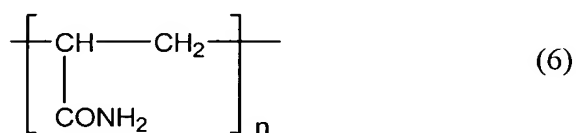
wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; R_1 represents a hydrogen atom or a methyl group, R_2 , R_3 and R_4 independently represent a hydrogen atom or an alkyl group; and n is an integer;



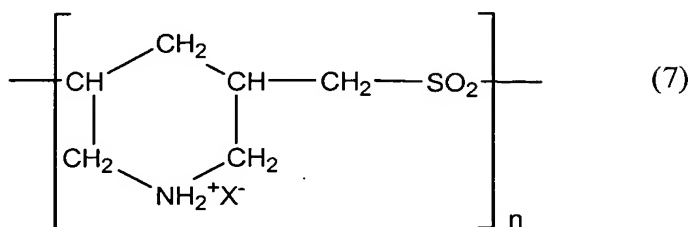
wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer;



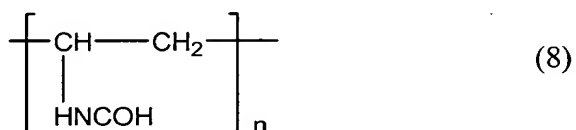
wherein n is an integer of from 5 to 30;



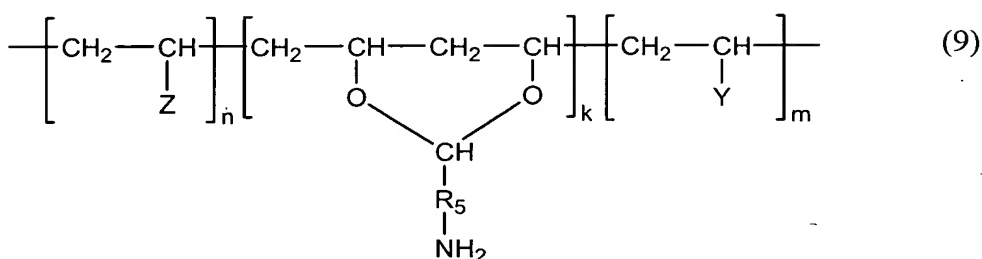
wherein n is an integer;



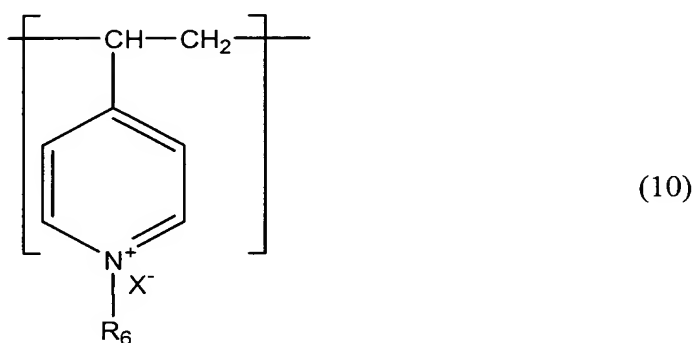
wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer;



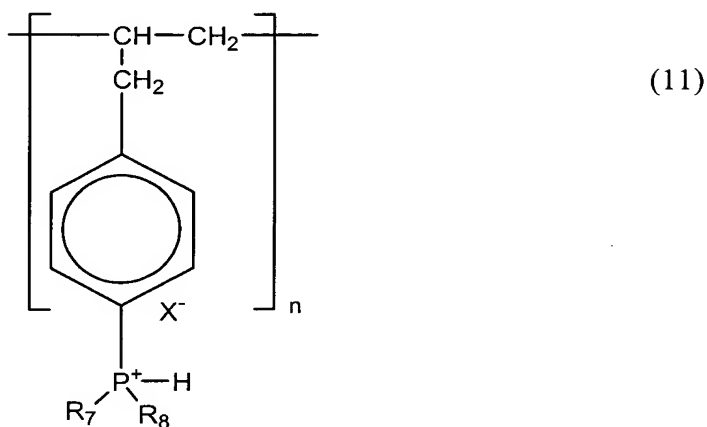
wherein n is an integer;



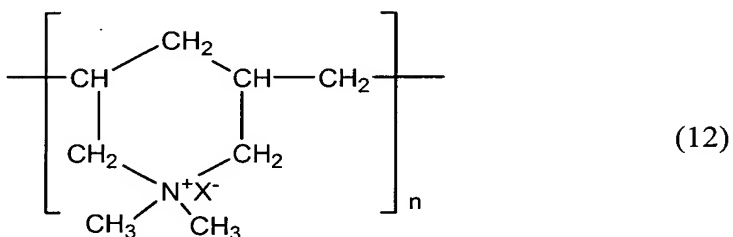
wherein Z and Y independently represent $-\text{OCOCH}_3$ or $-\text{OH}$; R_5 represents an alkylene group having from 1 to 4 carbon atoms; and n , k and m independently are integers;



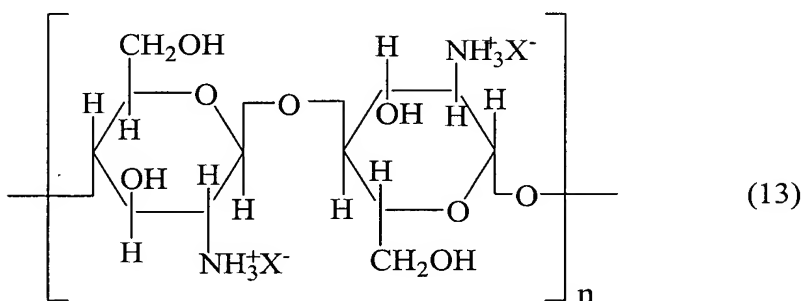
wherein R_6 represents an alkyl group; X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer;



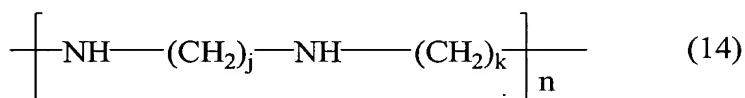
wherein R_7 and R_8 independently represent a hydrogen atom or an alkyl group; X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer;



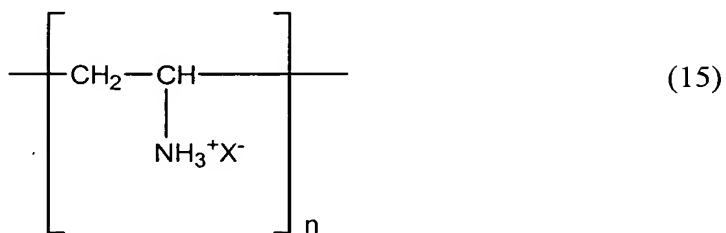
wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer;



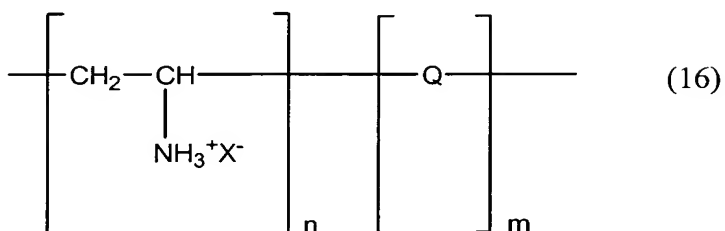
wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer;



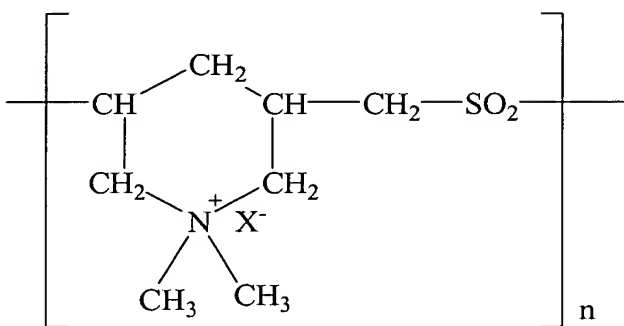
wherein j and k are independently an integer of from 2 to 6; and n is an integer;



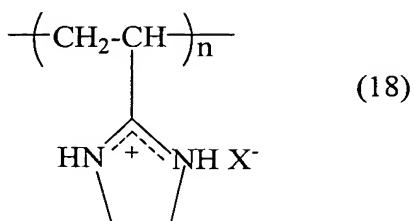
wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer;



wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; Q represents another repeating unit; and n and m are independently an integer;

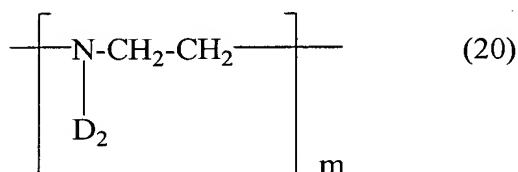
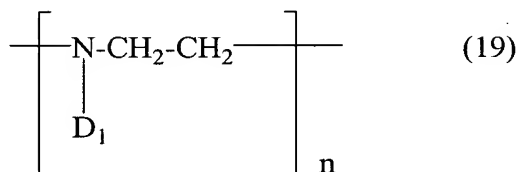


wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer; and

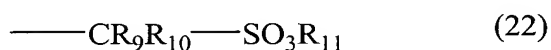
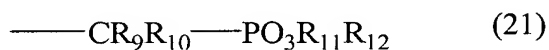


wherein X^- represents a halogen ion, a nitrate ion, a nitrite ion or an acetate ion; and n is an integer.

Claim 29 (Withdrawn): The pretreatment liquid according to Claim 26, wherein the cationic polymer is a cationic polymer comprising at least one of repeating units having the following formulae (19) and (20):

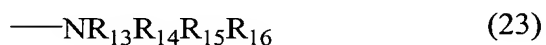


wherein D₁ represents a substituent having one of the following formulae (21) and (22); D₂ represents a hydrogen atom or a substituent having one of the following formulae (21) and (22); n and m are independently an integer,



wherein R₉ and R₁₀ independently represent a hydrogen atom, an alkyl group having from 1 to 12 carbon atoms or an allyl group;

R₁₁ and R₁₂ independently represent a hydrogen atom, an alkali metal or a substituent having the following formula (23):



wherein R₁₃ to R₁₆ independently represent a hydrogen atom, an alkyl group, an allyl group, a hydroxyalkyl group or a benzyl group.

Claim 30 (Withdrawn): The pretreatment liquid according to Claim 25, wherein the cationic compound is dispersed in the pretreatment liquid.

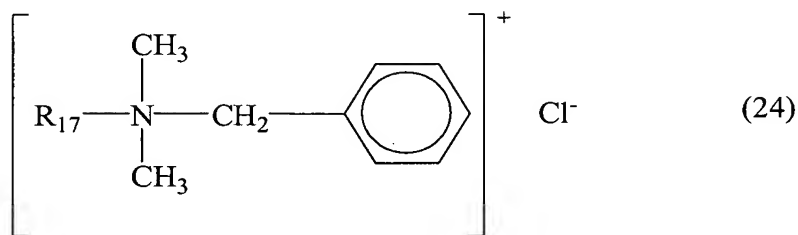
Claim 31 (Withdrawn): The pretreatment liquid according to Claim 30, wherein the cationic compound is a cationic silica.

Claim 32 (Withdrawn): The pretreatment liquid according to Claim 30, wherein the cationic compound is emulsified in the pretreatment liquid.

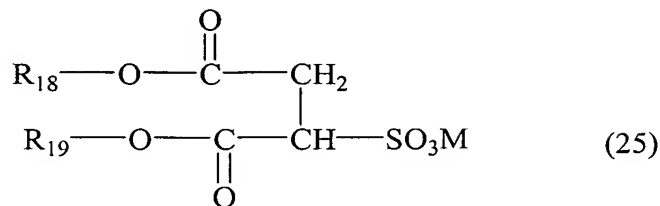
Claim 33 (Withdrawn): The pretreatment liquid according to Claim 14, wherein the compound that depresses at least one of the dispersibility and solubility of the component in the recording ink is a water-soluble polyvalent metal salt.

Claim 34 (Withdrawn): The pretreatment liquid according to Claim 14, further comprising at least one of a surfactant and a wetting accelerator, wherein the pretreatment liquid has a surface tension not greater than 40 mN/m.

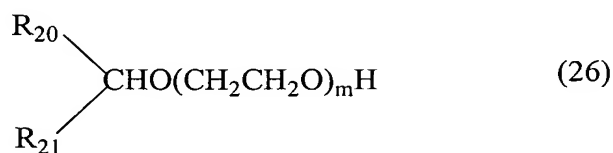
Claim 35 (Withdrawn): The pretreatment liquid according to Claim 34, wherein the surfactant has a formula selected from the group consisting of the following formulae (24) to (29):



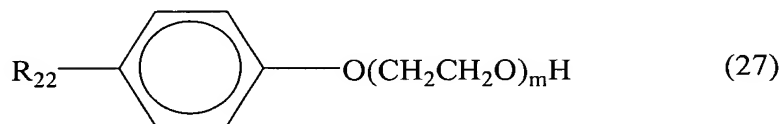
wherein R₁₇ represents a lauryl group, a stearyl group or a myristyl group;



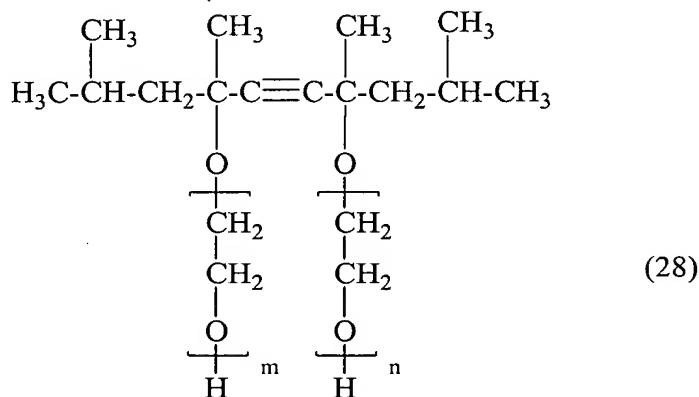
wherein R_{18} and R_{19} independently represent an alkyl group having not less than 3 carbon atoms which may be branched; M represents an alkali metal, an ammonium group, an alkanol amine group, a quaternary ammonium group or a quaternary phosphonium group;



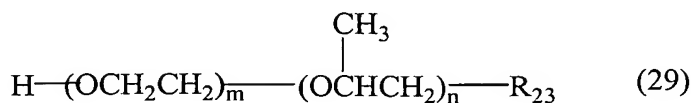
wherein R_{20} and R_{21} independently represent an alkyl group having from 5 to 7 carbon atoms; and m is an integer of from 5 to 20;



wherein R_{22} represents a carbon chain having from 6 to 14 carbon atoms which may be branched; and n is an integer of from 5 to 20;



wherein m and n are independently 0 or an integer of from 1 to 20; and



wherein R_{23} represents a carbon chain having from 6 to 14 carbon atoms which may be branched; and m and n are independently 0 or an integer of from 1 to 20.

Claim 36 (Withdrawn): The pretreatment liquid according to Claim 34, including a surfactant, wherein the surfactant is included in the pretreatment liquid in an amount of from 0.1 to 10 % by weight.

Claim 37 (Withdrawn): The pretreatment liquid according to Claim 14, further comprises at least one of an antiseptic agent or antimildew agent in an amount of from 0.1 to 5 % by weight based on total weight of the pretreatment liquid.

Claim 38 (Currently Amended): An image recording method comprising:
discharging a recording ink according to image signals to form an ink image on a surface of the recording material on which a pretreatment liquid is applied and has dried, wherein the recording ink comprises a solvent and a component dispersed or dissolved in the solvent,

wherein the pretreatment liquid comprises a compound depressing at least one of the dispersibility and solubility of the component in the recording ink in an amount of 10 to 80 % by weight based on total weight, and

wherein the pretreatment liquid has a viscosity of from ~~10~~ 100 to 10,000 mPa·s at 25 °C.

Claim 39 (Withdrawn): A recording material having on a surface thereof a dried pretreatment liquid, wherein the pretreatment liquid comprises a compound depressing at least one of the dispersibility and solubility of the component in the recording ink in an amount of 10 to 80 % by weight based on total weight, and wherein the pretreatment liquid has a viscosity of

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from 10 to 10,000 mPa·s at 25 °C.

Claim 40 (New): The image recording method according to Claim 1, wherein said pretreatment liquid has a viscosity of from 300 to 2000 mPa·s at 25 °C.

Claim 41 (New): The image recording method according to Claim 38, wherein said pretreatment liquid has a viscosity of from 300 to 2000 mPa·s at 25 °C.

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BASIS FOR THE AMENDMENT

Claims 1 and 38 have been amended as supported at page 22, lines 4-10.

New Claims 40 and 41 have been added as supported at page 22, lines 4-10.

No new matter is believed to have been added by entry of this amendment. Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 1-41 will now be active in this application. Claims 14-37 and 39 stand withdrawn from further consideration as being drawn to non-elected subject matter.